REPORT

Of the President of the Board of Directors of the A. & M. College.

BRYAN, January 2, 1883.

His Excellency, O. M. Roberts, Governor of Texas.

SIR:—I have the honor herewith to transmit the report of the president of the A. & M. College of Texas.

By this report it will be seen that the college might have been filled with students who would pay for their boarding, fuel, light, etc., but for the fact that the legislature has required preference to be given state students, to the number of 93, who pay nothing to the college.

The college can furnish rooms and instruction to all its students free because the state has erected the buildings and the United States furnished the means of paying the salaries of professors. But it has no means of furnishing boarding, fuel and lights to any one, without compensation. The question as to whether the state shall make an appropriation to pay these expenses of state students is then identical with the question whether there shall be state students admitted into the college. It is hoped that your excellency will see the importance of recommending to the legislature a speedy indication of its future policy upon the subject, as the state students are now in the college without any provision for their expense.

The salary of $1,500 a year allowed the professors contemplates the addition of the use of a residence for each of them. There are however two of the professors now without any place of residence. This is a great inconvenience to them. It is believed that the state should provide means to place them on an equality with the other professors by supplying them each with a comfortable dwelling house.

Respectfully submitted.

J. D. THOMAS,
President Board of Directors.

PRESIDENT'S OFFICE,
A. AND M. COLLEGE OF TEXAS,
COLLEGE STATION, Dec. 31, '82.

His Excellency, O. M. Roberts, Austin, Texas:

SIR—I have the honor to submit the following report of the condition of this branch of the state university, with a brief statement of its objects and methods:

OBJECT OF ITS FOUNDATION.

Wisely recognizing the intimate connection between industrial pursuits and national and state development, the laws, Federal and state, by which this college was created and endowed, contemplated for its object "The practical and liberal education of the industrial classes," and the consequent development of our material resources. The Federal Act of July 2, 1862, expressly provides that all revenue received from the land grant therein made "shall be inviolably appropriated by each state which may take and claim the benefit of this act, to the endowment, support and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the states may respectively prescribe." Texas formally accepted the gift with its conditions, and by its constitution of 1876, made this college which had already been established by act of legislature April, 17, 1871 "*a branch of the University of Texas, for instruction in agriculture, the mechanic arts, and the natural sciences connected therewith.*"

The present course of studies and duties are arranged carefully in conformity with these requirements, embracing besides the theory and practice of the leading features prescribed by law, a liberal and thorough education in the English branches, mathematics the natural sciences, history, literature, etc.—and the cost has been kept within the means of the classes intended to be benefited.

The marvelous growth of our state in population and wealth in the past five years, the unparalleled expansion of its railway system and great industries, and the natural resulting commercial activity in various forms—all unite to give value and importance to the educational experiment here, which is seeking to contribute skilled workers and intelligent directors to aid in sustaining and carrying forward the grand work of developing our natural resources. In the period above mentioned one hundred millions of dollars have flowed into the state and been permanently invested in railways, cattle, sheep, lands, manufactures and other productive property, and there is not a single one of those lines of industrial activity which does not require each year for itself alone more young men of sound, practical, business education than this school can turn out. The proper sphere of usefulness of this college, therefore, will consist in so closely adapting itself to the leading industries of the state, that its work here may help to meet their wants, and to advance their interests not only by the general diffusion of practical technical knowledge, but by the solution, if possible, of many scientific problems connected with the advance of agriculture and the mechanic arts, and which require patient and labarious experiments, for which business men have not the time.

For these reasons the college deserves the fostering care of the state and her citizens. There should be at least one college in the state, the weight of whose whole influence and teaching shall be thrown in favor of the producing and not the consuming class of our population; which shall breed, by wise management, in its educational atmosphere, farmers, horticulturists, stock-raisers, machinists, manufacturers, engineers, and other increasers of actual wealth, rather than add to the overburdened ranks of the learned professions, and other non-producing classes.

The work has been wisely begun, the experiment so far successful, students are rapidly appreciating the value of practical education, and turning their energies into channels of industrial activity, and it only remains for the state to develop year by year, by liberal legislative appropriations the scientific and practical features which require heavy outlay for apparatus, machinery and materials, to make the school, in practical results, the most valuable of all its educational agencies. If that be done, the college can become a purely professional school for the great industries of life, and its work rendered infinitely more valuable to the state, by remitting to the university and the distinctively literary colleges all the work and instruction preparatory for the learned professions. A wise economical co-ordination of the parts of our higher educational machinery will doubtless follow the opening of our state university, of which this is an integral part, so that no department need duplicate the work of another.

It will be as impossible then, for a student to enter here and receive special and profitable preparation for one of the so-called learned professions, as it will be for a student to fit himself for the profession of mechanical engineering in an established law school. The industries are to-day far more profitable and certain than the learned professions; our people throughout the South are recognizing that fact, and the demand for that practical education which teaches *things and industrial and business processes*, rather than merely *books and theories* is rapidly modifying the courses of instruction of the old literary institutions even, as well as creating new schools of science, industry and design. The great mass of our population are under the necessity of requiring for their children an ducation which does not turn them out as college graduates, helpless, dependent and untrained in any means of making a livelihood, with even the rudiments of their future avocation to learn. And it is this demand which is shaping and developing the technical schools which are multiplying all over the land, and which must inevitably, as with the great powers of Europe, at no distant day greatly modify the present thoroughly unpractical course of instruction of our common schools, especially in the great centres of population.

ATTENDANCE.

The session opened October 2, 1882, with a full attendance. The number of matriculates to date is 200; the average attendance about 185. There could have been a great many more students matriculated had there been dormitory rooms for their accommodation. The number of pay students seeking an education here, and debarred entrance from want of dormitories, is a fact which deserves the careful consideration of your excellency and the legislature. Two hundred students is the present limit of the capacity of the college.

Of the students admitted 120 have been pay, and 80 state students. For the past two years so popular has the college been that it could readily have been filled with *pay students only*.

ACADEMIC DEPARTMENT.

The theoretical instruction (by text books and lectures) is embraced in the following departments, each in charge of a separate professor, viz: English Language, History and Literature; Physics and Chemistry; Ancient and Modern Languages; Agriculture and Horticulture; Mathematics; Mechanics, Engineering and Drawing. The president gives instructions in Book-keeping, and lectures on Laws and Forms of Business.

The progress of classes this year has been very satisfactory to the faculty, and the students have both in studies and conduct fully met their expectations. The detailed courses of instruction will be found in the accompanying catalogue, copies of which will also be furnished members of the new legislature for their information.

AGRICULTURAL DEPARTMENT.

Forty-one students have entered this course of studies and duties, five only pay, the rest state. This department cannot possibly be made either very useful or attractive to students unless it be filled up in a manner worthy of this great state and its greatest industry. In no science or industry is object teaching more essential than in agriculture; it is preposterous to attempt to teach it in any other way, and this college can never accomplish any results of value as an agricultural college until students can here have daily before their eyes the latest and best tools, implements, machines, and all the materials necessary for improved agriculture, horticulture and stock-breeding. Here should be displayed, as fast as invented, every improvement to cotton gins, threshers, mowers, ploughs, sugar-machinery, and everything else of interest to the planter. While a taste for fine stock, and a knowledge of the value of blooded animals, should be inculcated by typical animals of the purest strains of cattle, sheep, hogs, horses.

The present outfit in this department is a disgrace to the state and college. The only animals the state has ever purchased for this *agricultural* college are four work mules—not a cow, hog, sheep or horse. Indeed, not enough money has ever been given to fence properly sufficient land for small farm, to say nothing of pastures. A mower, a few ploughs, harrows, hoes, spades, etc., constitute the implement outfit. No tool house, farmer's house, museum, green house, or propagating house have been supplied for agriculture and horticulture, and no sheds or pastures for animals, should they be bought or given for the benefit of the department. The true agricultural colleges on this continent have been abundantly provided with everything necessary to advance a knowledge of improved agriculture in all its branches, and it would seem just to the great farmer class of this state, that the means should be provided here. In blooded stock alone the Agricultural College of Ontario, Canada, has $20,000.00 invested, and besides being a most instructive and attractive feature, it pays annually by sale of surplus stock bred on the college farm, a very handsome profit on the investment. Farmers go up from all over the dominion to the annual stock sale at the college, to bid for its thoroughbred animals. Surely this, the greatest stock-raising state on the continent, can afford to show at its college, for the benefit of the sons of her farmers and other citizens, specimens of all the best types of our most valuable domesticated animals.

The object of this course of study is to make those contemplating the profession of farming familiar not only with the scientific principle underlying it, but also with the most improved labor-saving machines of the age that can benefit him. Nothing can be gained by aiming to teach purely manual labor, just for the sake of laboring. That can be learned better on any farm in the country. The agricultural department should be a sort of agricultural museum and laboratory for the whole state, and the state should not hesitate in granting liberally of her means for this useful purpose.

The students throughout the session take part in all the farm operations.

The head of this department, Professor C. C. Georgeson, submits the following estimate for improvements:

To fence the college land	$2,700
For fine stock of cattle and sheep	5,000
For stables and yards for the stock	1,200
For a proper tool-house and implement shed, quarters for hired men and farm office	1,200
For a small green house and plants	1,200
To salary for a gardener—annually	600
	$9,300

MECHANICAL DEPARTMENT.

The matriculates in this department number 159, of whom 115 are pay and forty-four state students. The outfit, and in consequence, the results are much more satisfactory than in the agricultural department. For practical work a two-story framed building 84x34 has been turned into shops. On the ground floor the shop equipment consists of nine sets student's wood-working tools—fret-saw, jig-saw, iron table circular-saw, large wood lathe and two small ones. On the metal side of the shop, eight sets of vise tools, Pentice screw-cutting speed lathe, engine lathe, mounted grind-stone, fifty feet shafting, twelve horse-power engine with reversing link and indicator attachments; tool room, in which are kept a complete set of wood-working tools and supplies, and special tools for metal working, as taps, drills, dies, reamers and small shop supplies. A smith shop for dressing tools has been added entirely by the students. The second floor of the building is one large room, fitted up with forty-eight elementary sets of carpenters' tools and benches for the instruction of the entrance class in carpentry and jointry, before they are admitted to the machinery department. All students in the higher classes are rendered familiar with the construction and use of the steam engine, which is now run and managed continually by them alone. Draughting and designing are required throughout the course. Besides a great variety of practical exercise in carpentry and joinery, the making of models of engineering and mechanical structures, the student do all the repairing in metals and wood needed at the college, which are of simple character, and not too extensive; make their own drawing boards, rules, book-cases, hat-racks, and other articles of room outfit.

This department is very popular, and constantly excites the interest of those engaged in it. The machinery could be increased with great profit, as we have never been supplied with some of the most important elementary machinery.

LABORATORY OF PHYSICS AND CHEMISTRY.

So intimately connected with agriculture, the mechanic arts, and their related industries, are the branches of chemistry and physics, that all proper efforts are made to give them prominence in the course of instruction of all the leading industrial and scientific schools of technology. The two subjects constitute one department here (though each in itself a wide enough field of labor and research for any scientist or professor), under the charge of Prof. H. H. Dinwiddie who thus speaks of its wants:—

"A chemist and even an intelligent citizen without chemical knowledge can see around us immense possibilities for material development now wholly neglected.

Were this the proper place I could specify dormant resources now yielding nothing to our state which might easily be made by competent chemists to produce millions of dollars annually. Shall our Texas youth be fitted to gather this wealth, or shall they be mere laborers with the hands for strangers who must erelong be attracted by that which cannot be apparent to our own young men if they be denied the training necessary to enable them to profit by their opportunities?

Our laboratories now own about $2,500 worth of useful apparatus. We have no room at all suitable for students work, without which chemical study amounts to little. The small room in which as many as ten students have worked at qualitative analysis at one time has no ventilation, no water taps, no gas, no sinks, no desks and no closets for each student. If a building be furnished it can be properly fitted for the thorough instruction of thirty or forty students (probably as many as we need to provide for) for between $5,000 or $6,000. For a larger number the additional cost would be from $50 to $75 per student. If buildings now here could be altered and adapted, the cost on that account would probably not exceed $1,000. If a special building be erected (which should by all means be done) the cost should not be less than $12,000. Water might be supplied from large cisterns, and head given for the use of aspirators, etc., by raising it with a small steam pump. I estimate the total amount needed by our laboratories, including building, at $18,000; exclusive of building at $7,000.

The laboratory buildings of the University of Virginia, among the cheapest and best in the United States, cost, approximately, $12,500, the apparatus and collections about $17,000. I may add that the above figures are reliable since they are based upon estimates kindly given me by the eminent chemist, Dr. J. W. Mallet."

STATE STUDENTS.

Under the law of the last legislature ninety-three students are entitled to maintenance and instruction here at the expense of the state, but there are only eighty of that class now in attendance. They have as a rule made a most creditable use of their opportunities, and proven to be worthy of the state's bounty.

Of the appropriations of $7,500 for the year ending February 28, 1883, there remained unexpended at the close of last session $3,258.08, against which amount the college has rendered a bill for maintenance of state students for quarter ending December 4th, 1882, of $3,123.69, which leaves only $134.39 to the credit of the appropriation at that date. There will consequently be a deficiency for the period intervening between December 4, 1882, and February 28, 1883; and estimating for 93 students (presuming that existing vacancies will be filled) at regular rates of $13.33⅓ per month for board, fuel, washing, lights and quarters, it will amount to $2,935.00, which it is hoped your excellency will recommend the legislature to cover by an appropriation. As the legislature ordered 93 students to be received, and appropriated only $7,500 for each scholastic year of nine months, it will be readily seen by a simple calculation that only $8.96 per month was allowed for board, fuel, washing, lights, quarters and instruction of each student, and hence the deficiency. If state students are to be continued at this college, the appropriation for their support should be made for $13.33⅓ per month per student, as they cannot possibly be maintained here for less.

COLLEGE LAND SUIT.

A portion of the college land is in litigation between the state and college on the one side and Peter Winter and John S. Fowlkes and C. Tilley on the other. The said tract consists of 102 acres off the northeast corner of the college tract of 2,416 acres; and suit was brought at my instance, and by direction of the board of directors, after a survey of the college lands had convinced me that said tract was a part of the college purchase. I employed the law firm of Henderson & Henderson to bring suit, which they brought for the state, and subsequently at their instance the firm of Ford & Ford was employed, and they intervened for the college. At the trial of the case during the fall term of 1882, the plaintiff prevailed, and a recovery of the land was had for the state with the judgment conditioned for the payment by the state to the defendant, Peter Winter of $500, for his improvements, before he could be dispossessed.

The defendants have appealed said case to the supreme court, where it is now pending. Your Excellency is respectfully requested to recommend a legislative appropriation of $500 as required by the judgment, to pay Peter Winter for his valuable improvements on said land, and also one of $500, or as much thereof as may be necessary to pay attorneys fees, and costs of court.

PRESSING WANTS OF THE COLLEGE.

For the most pressing wants for quarters and equipment, for the extension of the college and its legitimate work not less than fifty thousand dollars will be needed. Agricultural, horticultural and stock-breeding cannot be taught from books alone, or illustrated in the lecture room. A large well fenced, well-stocked farm is a prime necessity, with that abundance of tools, teams, machinery etc., necessary for practical instruction of large classes. For the mechanical students we need large shops and a greater number of tools, machines and appliances. For the practical study of the sciences, chemistry, physics, botany, geology, mineralogy, we need a spacious laboratory to itself, with its various departments thoroughly provided with most approved and latest instruments of physical research, models, specimens, chemicals, etc. The department of civil engineering is suffering badly for increased number of instruments for field work. The library needs the constant addition of new scientific works as they appear, and the regular standard scientific journals. Quarters for two hundred more students, for professors and officers, and for the sick; apparatus and materials for giving instruction in printing, and in the use of telegraph and telephone; live-stock for the farm, and the means of artificial irrigation. These are only the most urgent needs, which must be satisfied if the college is to do well and profitably the great work which is expected of it by our people—which ought to be done by it as a factor in the state's progress. Fifty thousand dollars is a small sum to contribute for this purpose, especially when it is done to place within the means of the great mass of our population the advantage of a collegiate education on a practical, scientific basis. I remain, with great respect,

Your obedient servant,

JOHN G. JAMES,
President.